Department of Fish and Game

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Central Coast Region Trout in the Classroom Program

A quick guide to setting up your aquarium

The aquarium incubator should be set up at least 1 week before the eggs arrive in your classroom. This will allow you to monitor and stabilize the water temperature and check for problems with the equipment.

1. Gather River Gravel

2. Disinfect pea gravel and river gravel if it has been used before. Soak in a disinfectant solution or boil 10 minutes. Rinse if new.

3. Disinfect all equipment that has been used before with a Wescodyne solution or soak all parts in a 1:10 Clorox solution for 24 hours. This includes: aquarium, under gravel filter, air pump, thermometer, and baster, net, and buckets. Rinse thoroughly to remove all residue of disinfectant.

4. Assemble Under gravel Filter and Uplift tube

   A. Connect sections of under gravel filter with the plastic bands provided.

   B. Decide on position for the air pump and punch the hole out of the under gravel filter. Punch only one hole.

   C. Place filter inside aquarium.

   D. Fit the uplift tube for the air pump into the hole.

5. Place Pea Gravel and River Gravel in Aquarium

   A. Gently pour enough pea gravel to completely cover the filter. The small gap between the filter and aquarium wall must be filed with gravel. Alevin can burrow, and if they get under the filter they will be sucked into the air pump.

   B. Carefully place spawning gravel in the front half of the aquarium. Leave the back half covered only with pea gravel. This will make cleaning easier. There will be small spaces between the rocks. This is where the eggs will be placed.

6. Fill the tank with water to about 2 inches from the top.

7. Place the power head pump in the riser and attach it to the aquarium. Adjust the air flow to accommodate the aquarium size.

8. Put aquarium thermometer in the water, on front wall.

For chillers: Follow manufacturer's instruction. Set temperatures to 50-55°F.

Caring for your Eggs and Fish

All salmonids and trout need clean, cold water with plenty of oxygen. If you provide these conditions and keep the aquarium clean, your fish rearing experience should be successful.

Set up your aquarium incubator at least on one week before the eggs are delivered to make sure the system is working properly and the temperature is steady.

Placing Eggs:

Eggs are usually transported in a Styrofoam cup packed in ice. Put them into your aquarium as soon as they arrive in the classroom. Make sure your hands are clean and lotion-free. Carefully place the eggs, several at a time, into the spaces between the rocks. Put most of them right next to the front window, so students can easily see eggs develop and hatch.

Providing Darkness:

Eggs and alevin are harmed by light, especially the violet-blue range that is produced by fluorescent bulbs. They can take brief periods (about 30 minutes) of exposure to natural light without damage. To provide darkness, find a large box that will completely cover the aquarium and cut as needed to fit around the chilling unit hose and air hose. You can also tape sheets of paper to the aquarium sides. Leave the bottom and sides untapped in front, so it can be lifted for viewing, or cut out viewing window. Paper covering the top of the aquarium may be affected by moisture, so beware of inks that can drip into the water. Aquariums inside refrigerators will be sufficiently dark unless they face a bright window or light. You can make a curtain or screen for the window.

Removing Dead Eggs:

Some eggs may die, even in good conditions. The fungus that quickly forms on dead eggs will infect live eggs, too. Live eggs are pink to orange. Check the tank carefully every day and use the baster to remove any white, milky eggs.

Hatching:

The embryo produces an enzyme that dissolves the egg's shell. You may notice a little white foam on the surface at hatching time. Don't be concerned, it will not hurt the fish. Just after hatching, eggshells should be removed by changing half the water and using the baster to prevent fungus growth.

Alevin Stage:

Little care is required at this stage. Continue to check for dead fish and remove them immediately. The tiny alevin will remain in the gravel and will avoid light. Keep the incubator in darkness. Change half the water once a week.

Feeding:

After they swim out of the gravel, the fish need food. When you put food in the water, watch as it falls. Try to feed just enough so that no food reaches the bottom of the aquarium. Decaying food will contaminate the water and could kill your fish. Feed several times each day, but no more than once per 4 hours. They can survive a two-day weekend with no food, but feeding arrangements should be made for longer breaks.

Cleaning the Water:

After hatching the fish produce more wastes, so the water must be changed regularly. For smaller tanks (5 or 10 gallons) change the water least once a week. The new water must be the same temperature as the aquariums water. If you use a refrigerator for your cooling system, just put the water on another shelf the day before cleaning. If you use a chilling unit, refrigerate the water and check the temperature with a thermometer before adding to aquarium. Scoop out the dirty water with a small bucket or plastic bowl, or use a siphon. Dirty water should be drained into a large bucket and inspected for fry. Use your fish net to replace any fry that accidentally get removed from the aquarium. You can only change about half of two-thirds of the water. Work quickly - this is stressful to the fish.

Cleaning the Gravel:

Use the baster to flow air into the gravel, which will dislodge particles of debris. Scoop up the debris with the fish net. You may also use an aquarium vacuum, but be sure to dump the dirty water into a bucket, not directly down the drain, so you can rescue any loose fry. Clean the gravel daily after hatching.

Releasing the Fish:

This is a very stressful day for your fish. They should be moved as quickly as possible. Drain half the water from the tank and scoop the fish into a disinfected 5 gallon plastic bucket or cooler. Allow about 45-60 minutes to transfer all the fish. If you must travel some distance, or if it is very warm, you'll have to do something to keep the water cold and oxygenated. This can be accomplished in several ways. A battery operated bait aerator or bicycle pump will keep oxygen in the water, or you can continually scoop out and pour water back into the bucket from a height of about six inches. To keep the water cool, take along small blocks of ice or ice cubes (made from aquarium water) and drop them in as needed. Or, carry ice in zip-lock bags and dip into water as needed. Be sure to take and use a thermometer.

At the release site, you must gradually bring the bucket water to the same temperature as the stream. This may take a little time, so have something planned for your students to do.